

SL-3 "Supercrew" Gets 150% of Mission Goals

ROUNDUP

NASA LYNDON B. JOHNSON SPACE CENTER

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Although the Skylab-3 mission has been completed, scientists and principal investigators will be busy for years analyzing data from the experiments performed by astronauts Bean, Lousma and Garriott.

Kenneth Kleinknecht, Skylab Program Office manager, said at the post-flight press conference that the crew brought back to earth more than 150 percent of their goal in scientific data.

"With the longer duration mission, the crew gets more proficient because of inflight training and experience . . . Kleinknecht said.

Reg Machel, manager of the Orbital Assembly Project Office said that several new things which had never been observed before were recorded in this mission.

Among these new items are coronal holes, or voids in the sun's corona. Experimentors found that the velocity changes of the gasses and of the material moving across the sun were much higher than anticipated. Data was also gathered on major solar flares.

Over 10,000 frames were taken with the multispectral camera, 2,000 frames with the earth terrain camera and 25,000 frames with visual tracking system. The multispectral scanner, infrared spectrometer and micro wave sensors recorded over 90,000 feet of magnetic tape data. "The VTS film turned out to be better in this mission than the previous mission from a standpoint of resolution and clarity of earth sites. This earth resources data is:

(Continued on Page 2)



WIVES GREET SKYLAB-3 CREW—The wives of the Skylab 3 crew met their husbands at Ellington Air Force Base upon their return from 59½ days in space. Pictured, left to right are astronaut Owen Garriott and wife Helen, Alan Bean and wife Sue and Jack Lousma and wife Mary. The wives wore gingham gowns and bonnets and each presented her husband with a yellow rose. JSC Director Christopher C. Kraft (center) congratulates the crew on their return while chief of astronauts, Donald "Deke" Slayton looks on proudly.

Kohoutek Is SL-4 Bonus Feature

Tentative launch date for Skylab 4 astronauts Gerald Carr, Edward Gibson and William Pogue is November 11. Probably the first of the many activities the crew will undertake is reactivating the primary cooling loop.

Carr's crew will take with them a special saddle valve and tank of coolant to refill the primary loop's system. The astronauts explained the fix-it job as being similar to having a refrigerator serviced.

The crew will also use the Apollo Telescope Mount instruments to observe the comet Kohoutek. The crew emphasized that their mission objectives were the same as the previous Skylab missions, to test man's adaptability to space, to capture data on solar activity and to perform the earth resources experiments. However the Crew stressed the importance of the Kohoutek observations calling the comet a beautiful added bonus "which we just kind of fell into."

The crew will be taking extra food up with them, some specialized repair tools, a resupply of film for the various instruments and another exercise machine. This last item resembles a flat

board with four cords attached to the corners and will be used for exercising the large muscles of the lower leg. It has been called a

"Poor boy's treadmill."

The Skylab 4 crew expects to get about an hour of exercise in the space station a day.

Women Under Study For Shuttle Mission

Clinical research in female physiology to develop selection criteria for woman passengers in Space Shuttle mission has begun at NASA's Ames Research Center, Mountain View, Calif., as a follow-on to similar studies on men conducted last year.

Twelve nurses are joining a five-week experiment as volunteers to find out how weightlessness and reentry Gs may affect the female body. After two weeks of orientation and preliminary medical studies, eight of the 12 nurses will simulate weightlessness by absolute bedrest and four will act as ambulatory control subjects. After two weeks of immobility the eight women will be subjected to G forces expected when the Shuttle enters the atmosphere at the end of a mission. The last week is for recovery and final testing.

Part of the experiment's objective is to see how well women can resist the tendency for blood

to pool in the legs after a period without gravity and subsequent cardiovascular deconditioning already observed in male astronauts.

Another object is to determine female tolerance to the long period of low G forces which Shuttle reentry will create the

The third objective is to measure specific physiological changes induced by the simulated weightlessness. These measurements are on biorhythm, body biochemistry, cardiovascular responses, and changes and effects of endocrine gland activity under the stress of simulated spaceflight. Much of the data on the women will be compared to similar data on men to determine the reaction differences.

Medical literature on many of the test objectives for women is scarce or non-existent. The results and conclusions are therefore regarded vital as criteria for

(Continued on Page 4)

Faget Receives 1973 Guggenheim Award

Dr. Maxime A Faget, Director of Engineering and Development at JSC, has been named by the International Academy of Astronautics to receive the Academy's 1973 Daniel and Florence Guggenheim International Astronautics Award.

Faget this week received the award at the International Astronautical Federation 24th Annual Congress October 7-13 in Baku, Azerbaidzhan, in the Soviet Union.

The Academy gives the Guggenheim Award each year in recognition of an outstanding contribution to space research and exploration during the preceding five years. Faget was cited by the Academy for "playing a major role in developing the basic ideas and original design concepts that have been incorporated into all the manned spacecraft flown by the



DR. FAGET

United States...an expert on vehicles suitable for reentering the earth's atmosphere. He is particularly noted for his contributions to the basic configuration of the command module and the development of the pressure-fed hypergolic engines used on the Apollo modules."

Faget was elected an IAA

Second Blood Drive Set for Oct. 31

The second NASA blood drive for federal and on-site contractor employees will be held October 31 at the Gilruth Recreation Center. This is the first blood drive to be held under the Employee's Activities Association contract with St. Luke's Episcopal Hospital. The new contract differs slightly from the one last year with Blood Services of Houston.

Under the new plan the donor's spouse, unmarried dependent children under 23 years of age who are either full-time students and/or living in the same household and dependent parents living in the same household are eligible for benefits. If a donor is hospitalized outside the

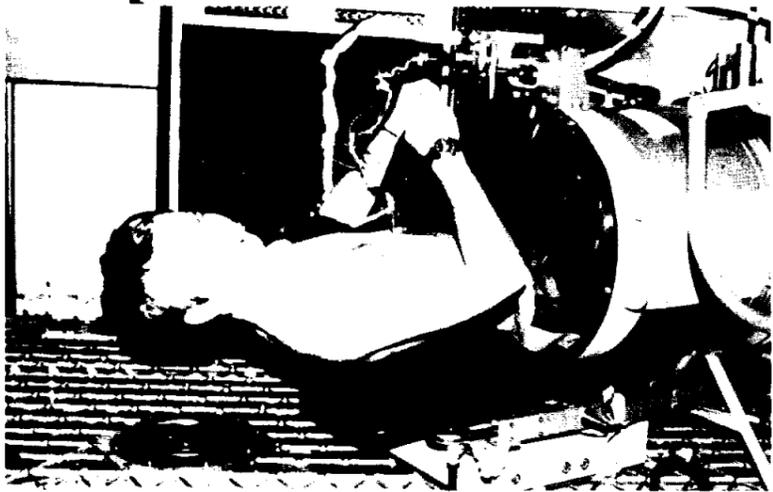
greater Houston area, blood replacement will be made by St. Luke's through the American Association of Blood Bank's National Clearinghouse System, wherever possible.

NASA blood drives began in the fall of 1966 when 12 NASA employees went to Houston to donate for the son of a fellow worker. That September the first bloodmobile drive resulted in 20 units being drawn. The following year that number was up to 640 but slipped to 609 in 1968. In 1969 the number of donors rose again to 799 and has risen every year since. Last year 1130 units of blood were donated.

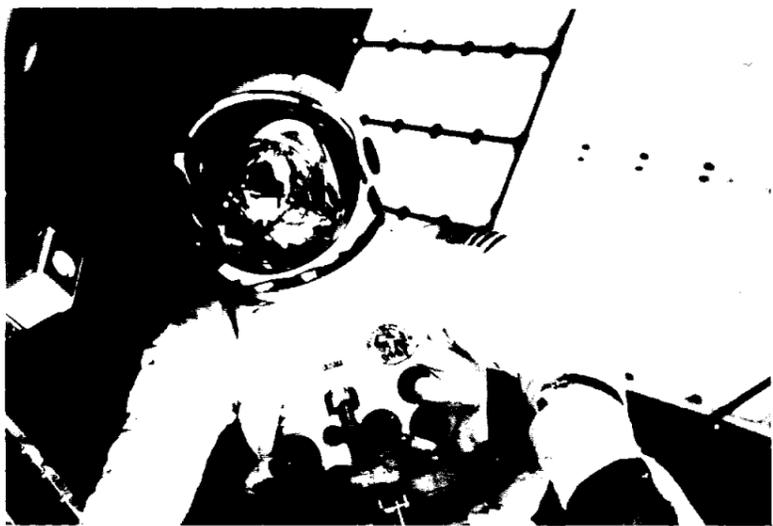


SCHOLARSHIP WINNERS—Scholarship students sponsored by the NASA Exchange-JSC were guests of the Exchange Council at a recent luncheon and tour of the Robert R. Gilruth Recreation Facility. Seated at the table, left to right are Kathleen Brown, Deborah Norman, Lee James, Peggy Powell, Patricia Stokes, Susan Dittman, and Marilyn McBride. Standing are Marilyn Bocking, chairman of the Scholarship Committee for 1973 and Jack Lister, member of the Scholarship Committee. A Scholarship recipient not pictured is Michael Stutesman.

Space Station Proves Quite Habitable for SL-3 Crew



PRESSURE DEVICE—Scientist-Astronaut Owen K. Garriott, science-pilot of the SL-3 mission, lies in the Lower Body Negative Pressure Device in the work and experiments area of the Orbital Workshop (OWS) crew quarters of the SL space station. The LBNPD (MO92) Experiment is to provide information concerning the time course of cardiovascular adaptation during flight, and to provide inflight data for predicting the degree of orthostatic intolerance and impairment of physical capacity to be expected upon return to Earth environment.



STRIKING REFLECTION—Astronaut Jack R. Lousma, Skylab 3 pilot, participates in the August 6, 1973 extravehicular activity during which he and Astronaut Owen K. Garriott, science pilot, deployed the twin pole solar shield to help shade the Orbital Workshop. Note the striking reflection of the Earth in Lousma's helmet visor.



PUSH BUTTON SHOWER—Lousma takes a hot bath in the crew quarters of the OWS. In deploying the shower facility the shower curtain is pulled up from the floor and attached to the ceiling. The water comes through a push-button shower head attached to a flexible hose. Water is drawn off by a vacuum system.

JSC extends Lockheed's Contract

A third year extension in its contract to provide general electronic, scientific and computing Center support services has been awarded to the Houston Aerospace System Division of Lockheed Electronics Company Inc., Plainfield, New Jersey. The amount in the cost-plus fixed-fee contract is for an estimated \$32,773,000. The work will be done at JSC.

Under the terms of the award, Lockheed supports the Engineering and Development, Flight Operations, Flight Crew Operations and Life Sciences Directorates in a variety of functions associated with computer opera-

tions and maintenance, general electronics, instrumentation and engineering.

This is the largest support services contract at JSC in terms of personnel. More than 1550 Houston-area personnel are employed under the contract.

Lockheed initially was awarded the work in 1971. The contract contained provisions for five negotiated one-year periods. This third yearly extension remains in effect through August 31, 1974.

More than \$50 million in payments have been made to Lockheed for the prior two years that the contract was in effect.

about three times the amount of data gathered on Skylab 2, Machell said.

Also, the beginning and ending stages of tropical storm Christine were covered as were African drought areas, Mt. Etna—an active volcano and a severe storm in Oklahoma.

During the post-flight press conference the Astronauts were asked what they thought of the possibility of extended periods in space and whether there would be any problem with boredom or crew tension. Garriott probably summed the crew's position about boredom when he replied that "the interest or tendency to become bored is to some extent based on makeup."

"... Personally I could have spent 8 hours a day at our wardroom window with a camera in each hand and a good supply of film and never have any tendency to ever become bored," Garriott added.

Lousma said they never lost their desire to work hard and were always motivated to get the maximum out of themselves and out of the equipment. "And we appreciated that same effect with the ground controllers as well. They always seemed enthusiastic, and interested in getting the answer up quickly, we thought it was a real professional job by the guys on the ground."

Bean complimented Owen Garriott as Scientist-Astronaut. "I think one of the things we talked about a couple of times up there was the advantage of having a scientist-astronaut on the crew. I couldn't anymore look out the window 8 hours a day for 2 months than anything. It would bore me to tears. I think this was one of the great things about a scientist-astronaut. Owen was a little bit different. He had a different point of view on a lot of things.

I think the mission would have been at least 50 percent less productive if Owen had not been there. He added a great amount to it, and I think mostly because his point of view is just different than Jack or mine. And I would say anytime you can mix up the group that's up there and still get the job done, that's going to add to the total benefit of the mission, greatly," Bean concluded.

In commenting on their return to a one-g environment, Jack Lousma said, "I think the first sensation that I noticed to go away was the extreme heaviness which you feel being back in one-g. And I think that took about 24 hours in my case. The other tendencies—to float places and try to float things—went away about the same time. The next symptom to disappear was the lightheadedness." All the crew members expressed their feeling that they could have stayed up in Skylab considerably longer. Right after lift-off, Lousma said to Garriott and Bean "I want to do that again."



CHOW TIME—Astronaut Garriott reconstitutes a pre-packaged container of food at the crew quarters ward room table of the OWS. Note the knife and fork on the food tray and the utensil with which Garriott stirs the food mixed with water. Skylab is the first manned space program by NASA which affords the crewmen an opportunity to eat with the same type utensils used on Earth.



RELAXATION TIME—Astronaut Alan L. Bean, SL-3 commander relaxes in his sleep restraint by reading a book. Bean is in the crew quarters of the Skylab space station cluster in Earth orbit.



SPLASHDOWN!—An excellent view of the three main ring sail parachutes of the SL-3 command module as they unfurl during descent to a successful splashdown in the Pacific Ocean. These parachutes open at approximately 10,000 feet altitude.

Ideas Are Worth Money to JSC

JSC Director Christopher C. Kraft announced recently that ideas for improving operations at JSC have resulted in cost savings and more effective methods of accomplishing daily Center activities.

Dr. Kraft encouraged employees to participate in JSC's Suggestion Program, "A Suggestion Form should be submitted to the Awards Office (AH/5) if there is something in your organization which you would not normally be expected to change, or if you have a proposal for improving something outside your work area.

"Your suggestion will be

brought to the attention of the appropriate management official, and if the change is in the best interests of the Center, you will be considered for a cash award when it is implemented." Dr. Kraft added.

The JSC Suggestion Program is part of the Incentive Awards Program which is designed to make government careers more challenging and rewarding. It provides an opportunity for employees to be recognized for useful ideas.

Dr. Kraft observed, "When your ideas result in significant improvements and greater efficiency, we all benefit."

Roundup Swap-Shop

Swap Shop advertising is available to JSC and on-site contractor personnel. Articles or services must be offered as advertised, without regard to race, religion, sex or national origin. Ads should be 20 words or less, including home telephone number. Name and office code must accompany, but need not be included in ad copy. Typed or printed copy must be received (AP3 Attn: Roundup) by Thursday of the week before publication.

MISCELLANEOUS

Pool Table w/ accessories, \$300. Bob, x 5972, or 474-4765.

Ballroom dancing lessons, have few openings for EAA members, class to begin soon, Wed nites, 7:30-9:30, Roy, 4535.

Marlin Glenfield, .22 cal bolt action sevy shot repeater w/ 4 pwr scope, prfct, \$30, 488-3966.

Golden Home & Sch encyclopedia, 20 vol, 3000 pages, xInt cndn, \$15, Rothman, 488-6640, 333-3889.

Lowrance fish n temp, used once, \$18, Day, 664-9472.

Snapper Comet, riding lawn mower w/ grass catcher attachment, 30" cut, 8 hp Briggs & Stratton engine, 6 mos old, 482-3116.

Welding tanks, 60 cu ft, Acetylene, 80 cu ft, oxygen, \$80, Huber, 5800 or 334-3245.

Shultz & Larsen, 308 rifle w/ variable scope, cmplt RCBS reloading outfit plus ammo & powder, \$300 or lawn/garden tractor, 331-5124.

Piano, RMI Electronic, was \$900, now \$450, amp, kustom 200 watt w/ 3-15" CTS speakers, \$450, Potter, 585-2703.

Vita-Master Variable speed belt massager, nw, bst ofr, Jones, x4736.

Baby grand piano, antique white w/ naturalwood grain top, \$450, Nassiff, 482-7546.

Simulated wrought iron light fixtures, 1 five bulb chandelier, 1 single bulb hall lite, 2 two-bulb wall sconces, nw value approximately \$80, now \$35 for all, 944-8717.

Organ, Hammond model E-100, cherry wood, xInt cndn w/ percussion, etc, \$2100, Norris, 334-1777.

Textan Hereford Barrel saddle barely used, \$250 orig, now \$175, inclu, bridle, saddle pad, saddle, 482-7858.

.44 Navy Colt cap & ball revolver (replica). Rosewood grips, brass frame, blue steel cylinder and barrel, mnt cndn, \$65, Ullrich, x 3325 or 487-0307.

Bic/Decker Industrial router/planer kit w/ metal case, li new, \$90, Sears motor, 1 1/2 hp, Industrial 120/240 v, \$50, Sears Router, Industrial, \$35, Sears 4" belt sander, \$40, 471-6798.

Two 2' padded 2"x4" boat trailer pads w/ hangers, \$5/pr of galv bolt-on elevated trailer lite stands, fits any trailer, keeps lites dry, \$5/13" 4 lug galv trailer rim, nw cndn, \$10/1 7/8" trailer coupling, ball for 3" sq tongue, \$4, hi pwr rifle, \$10, Mike, 6493 or 538-1047.

Three carat Diamondett ring, Tiffany setting on wh brushed gold wide band, will sacrifice for \$125 Judy, 5111.

VEHICLES

70 Chrysler, 2-dr ht, vinyl top, radial tires, xInt cndn, 334-4147 aft 5 p.m.
Honda 100 motorcycle, xInt cndn, \$350, Lee, 941-7169, 944-8885, aft 5 p.m.

64 Ply Valiant, auto, air, radio, xInt tires, \$595, Bullock, 4861/488-1042.

71 Honda 350 SL, low mi, xtra helmet, sprockets, \$500, 334-2694.

71 Plymouth Satellite Sebring, 2-dr ht, custom purple w/ half white vinyl top, auto trans, pwr str, air, heater, radio, \$2100, Marilyn, 5861-5827.

Rambler sta wgn, 62 gd running w/ air, 6 cyl w/ ovr dr, \$150, Rodman, 554-2897.
Penton 100, MX and Yamaha 90 MX, joth xInt cndn, Blackshear, 946-8312.

69 Buick Skylark Custom 350 CID-2B, radio, air vinyl top, mag wheels, pwr str, \$1800, 482-1179.

68 International Travelall, auto, pwr, air, etc, \$1675, J. L. Day, 664-9472.

64 Volvo, gd tires, gd running cndn, nds some repair, \$150 or bst ofr, Johnson, 488-5010 aft 5 p.m.

73 Luxury Lemans, 13,000 mi, prfct cndn, red w/ white vinyl top, red interior, 479-3848 aft 5 p.m.

64 Pontiac Grand Prix, pwr, air, vry gd cndn, \$525, 334-1110.

Buick Le Sabre, 69, 4-dr, pwr, onw owner, A-1, Forsyth, 534-3113 Dickinson.

72 VW Super Beetle, air, 8700 mi, top cndn, \$2,200, 482-2091 evenings or wkends, 482-7642 Friendswood.

Dunebuggy, Corvair, Calif. custom must sell, Bullock, 488-6095.

69 Firebird 350, 1 owner, xInt cndn, 483-2691 days, 946-9146 nights.

71 Pontiac, 24,000 mi, 2-dr, v/ht, pwr b/s, seats, windows, AM/FM stereo, climate cntrl, gd tires, xInt cndn, \$2,600, Kelly, 482-3034.

73 Pinto Squire Wgn, 2400 mi, a/c, std shift, iug rack, radio, \$350 cash refinance or take up payments, Poindexter 474-2203.

68 VW Squareback, newly rebuilt engine, nw steel-belted radials, AM/FM radio, \$750, Amann, 503 or 333-2359.

63 Oldsmobile 88, 58,000 mi, clean, 4-d sedan, air pwr s/b, xInt cndn, Hall, 946-4453.

68 Chevrolet Impala Wagon, pwr, tape deck, 1 owner, gd cndn, \$850, Mrs. Gast, 334-1417.

Boys' bicycle, 20" w/ training whs, Huff, 24" AMC, \$9.99 ea., 488-3183.

BOATS

14' Hobie Cat w/ trailer, xInt cndn, 2 yrs old, \$1095, Lenoir, 334-2637.

Fiberglass ski boat w/ xInt, 69 55 hp Johnson, nw lites, bearing buddies, spare, xtras \$1200, Allgeier, 333-4627.

16' Hobie Cat sailboat, fiberglass, main and jib, custom big wheel trailer, accessories, Armstrong, 332-2381

PETS

Adorable AKC Toy Poodles, 7 wks, Hunt, 334-3101.

AKC registered collie at stud, champion blood line, gentle, sab and wh, 734-0506.

WANTED

Carpool from Danbury/Angleton area, hrs, 8-4:30, Howard, 922-1739, 483-2291.

2 tickets to Texas/Oklahoma football game in Dallas, Oct 13, 538-1147 (Kemah) aft 5.

Used portable sewing machine, old-time blade, ceiling fan, Gibson, x 6233.

Swap 3 acres on Lake, Dayton, Texas area for boat and rick or will take antiques, Tash, 534-3414.

Fifth member for deer lease, north of Bryan, Jim, 941-4733.

LOST AND FOUND

Found expensive ball point pen, owner may call to identify and claim, ext 4606.

PROPERTY AND RENTALS

House in Friendswood, 3-2-2, 7 1/2 % V.A. loan, low equity, \$208 mo, 941-2013.

Lease, 3-2-2 CLC, \$250/mo, \$100 deposit, 488-0810 or 483-4237.

Bayfront home, single or dbl family unit, xInt view, extras, 471-6798.

1/2 acre lots, Roman Forest Sec III, below market pr, Lake Conroe waterfront townhouse lots in Cape Conroe Sect I, private owner, 471-6798.

HOUSEHOLD ARTICLES

Bookcase hdboard in gd cndn, \$20, nw home sewing machine w/ cabinet, \$40, 481-0439 aft 5.

RCA b&w 23" t.v. \$25, Chrysler 1 1/2 ton a/c, motor runs only, w/ gd cvr, \$25, 946-4311.

Microwave oven, Kenmore's largest model, less than 1 yr old, \$350, 482-7858.

Kenmore 30" white elec range, gd cndn, \$40, McGhee, x 2254 or 649-7715.

Antique iron pots, butter churns, hand irons, glasslid pint and quart jars, brass plated 40 qt milk cans, 471-6798.

IBM Gets Shuttle Avionics Contract

JSC has awarded the Electronics Systems Center of IBM Federal Systems Division, Owego, New York a contract to design, implement and maintain avionics software for a data system on the Space Shuttle orbiter.

Estimated cost of the developmental program is \$6,618,500 for the initial increment of the contract. A cost-plus fixed-fee type of award has been issued. It will remain effective through April 10, 1975.

The term "software" relates to mathematical computations and information translated into language acceptable for computer systems.

In space terminology, the IBM award is for a Space Shuttle Orbiter Avionics Software Development. It is to be Government Furnished Equipment (GFE) separate from the orbiter manufacturing program underway by Rockwell International, Downey, California.

Work to be performed by IBM falls into three major categories:

—Design and maintenance of the software programs for Data Processing Systems (DPS) on the orbiter.

—Development and maintenance of the tools required for the software program.

—The design, development and maintenance of test software for ground based facilities such as the Avionics Development Laboratory and the Shuttle Avionics Intergration Laboratory, both of which are planned for JSC.

The contract was awarded in two increments. During Increment I, the contractor will develop in-depth programs for orbiter missions and for the supporting laboratories.

IBM earlier was selected by Rockwell International to design and produce two other key electronic units for the Space Shuttle orbiter. The components are an orbiter general purpose avionics computer and an input-output unit that works in conjunction with the computer.



THEY'RE ALL IN THE FAMILY—When Texas Southern University's Ron Jenkins crossed the finish line to capture first place in the 1600 meter relays at the World University Games in Moscow, Russia, certain JSC employees were proud to claim the 21 year old track star as "part of the family." Sitting with Ron in the top photo is his father, J. D. Jenkins of the Center's Quality Assurance Division. They are holding Ron's gold medal. Standing, left to right are three of Ron's uncles, Jessie L. Rollins of the Logistics Division, Goree Jenkins of Management Services; and Chester H. Jenkins of the Program Operations Office. In the bottom photo, JSC Director Christopher C. Kraft chats with Ron about the World University Games which took place August 15-25.



Donna L. Sanders Gets Outstanding Award For Oct.

Donna L. Sanders, secretary to the Chief of the Planetary and Earth Sciences Division has received the Outstanding Secretary Award for October. Miss Sanders was nominated for her sustained exceptional performance during the past year as secretary for the late Dr. Paul W. Gast. Donna's exceptional dedication, tact and cheerfulness greatly contributed to Dr. Gast's efforts in his last months to pull together his research studies and ideas regarding science and human life.

In addition to personally supporting Dr. Gast, Miss Sander's talents and efficiency contributed immeasurably to maintaining the stability of the Division during this trying period.



OUTSTANDING SECRETARY AWARD—JSC Director Christopher C. Kraft is presenting the Outstanding Secretary Award to Donna Sanders, Secretary to the Chief of Planetary and Earth Sciences Division. Miss Sanders received her award for the month of October.

ROUNDUP

NASA LYNDON B JOHNSON SPACE CENTER HOUSTON TEXAS

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Space Research Contributes to Fire Prevention Program

"Recognizing that maximum benefit can be obtained from space research only when our discoveries are widely shared . . . we hope you will find ways of adapting some of the many varied findings presented here to relieve and reduce the hazards of fire in

everyday working and living—in housing, hospitals . . . cars, aircraft, theatres . . . wherever people and their valued possession may be."

This statement made by former NASA Administrator Dr. Thomas Paine, May 6, 1970 at a JSC

sponsored "Conference on Materials for Improved Fire Safety," reflects NASA's involvement with one of the nations most serious problems—the control and elimination of fire perils.

In aerospace design, fire safety had always been a top-priority item. However, the best efforts were not good enough. The tragic Apollo spacecraft fire of January 27, 1967, took the lives of Astronauts Virgil I. Grissom, Edward H. White, II, and Roger B. Chaffee—stunning the world and threatening the future of space flight.

But from the tragedy emerged a flameproof and firecontrol program based on the most extensive scientific fire safety research ever conducted by man.

Available today to government and industry are fire prevention and protection techniques and materials that might never have been discovered had it not been for the launch pad fire.

The mandate in designing spacecraft after the Apollo fire was threefold: substitute wherever possible with completely fireproof material; if suitable substitutes do not exist, develop them; and if any item cannot be made fireproof and cannot be deleted from the spacecraft, cover it with fireproof material.

Some 27,000 different tests conducted in the months following the fire reduced the number of acceptable materials that would not burn in oxygen at high pressure to just five: the glasslike material called Beta-fabric; a metallic fabric of nickel and chromium fibers; an asbestos-like material; the organic polybenzimidazole (PBI); and a Fluorocarbon, hexafluoropropene - vinylidene - fluoride copolymer.

These five materials were not developed by NASA, but all were evaluated and catalogued for flammability, toxicity, and wearability in NASA's search for a fireproof spacecraft.

Realizing that the data which resulted from research into the qualities of those materials could be useful, a small group of JSC employees obtained support through NASA's technology utilization program to publicize the flammability tests and their results.

The group planned and conducted a series of seminars, lectures and demonstrations which described the testing procedures and results, development of new materials, applications to the spacecraft, and continuing research into fire prevention.

One of the projects undertaken to apply knowledge gained from the research was designing non-flammable interiors for two Air Force and two NASA aircraft, and similarly, fireproofing the interior of the mobile home used as a transportation quarantine facility for the first three Apollo Moon-landing crews.

NASA also developed items for multiple applications such as nonflammable foams, films, fabrics and papers, surface and wall treatments, and paints.

JSC was given the responsibility for testing and applying these materials to fire resistant carpeting, seats, headrests, paneling, curtains and fire walls, among other items.

In addition, JSC has developed and has under test protective firefighter's clothing designed from materials first used in the space program.

Early testing of the protective garments was implemented with the help of the Houston Fire Department. JSC has also distributed prototype protective ensembles to departments in various parts of the country for field tests and evaluations.

Fire Prevention Week ends tomorrow; however, the space agency continues to contribute to the fire safety program.



FIRE SAFETY ITEMS—Pretty Sharon Boniface, Lunar Landing Queen, is shown with two fire safety items—heat and smoke detectors—which can be obtained at the JSC Exchange store at nominal cost. Observe fire prevention week and every week by taking steps to make your home safer.

Women as Shuttle Passengers

(Continued from Page 1)

the selection of Shuttle passengers, both male and female.

The studies will be in a carefully controlled laboratory environment at the Ames Human Research Facility for the bedrest and laboratory parts of the test. An Ames centrifuge is to be used for the G-tolerance testing. At both facilities, a variety of safety precautions and teams of physicians technicians and consultants will monitor each test activity.

Nurses were called for as volunteers because of their medical and flight training. It is not required that they be in prime physical condition like Mercury, Gemini and Apollo astronauts, but their general health is like that expected of Shuttle flight candidates.

The 12 subjects are all U.S. Air Force flight nurses, ten from Reserve units in the California area and other Western states. For the five weeks of the study they will be employed under a NASA contract. Two active duty nurses are under the direction of Col. Claire M. Garrecht, Command Nurse with the USAF Tactical Air Command at Langley Air Force Base in Virginia and the 10 Reserve nurses under the direction of Col. Pearl Tucker, Special Assistant for Reserve Nursing Services Office of the Chief A. P.

R., Washington, D.C.

Principal investigator for the experiments is Dr. Harold Sandler, Chief of the Biomedical Research Division at Ames.

Faget Gets Award

(Continued From Page 1)

corresponding member in 1965.

Among previous recipients of the Guggenheim International Astronautics Award have been former JSC Director Dr. Robert R. Gilruth; NASA Director for Life Sciences Dr. Charles A. Berry; State University of Iowa physicist-astronomer Dr. James Van Allen; Jodrell Bank Experimental Station director Sir Bernard Lovell; president of the Academy of Sciences of the USSR, Prof. mstislav Keldysh; and Soyuz 9 cosmonauts Col. Andrian Nikolayev and Dr. Vitaly Sevastianov.



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Now 2 Bonds pay 5 1/4% interest when held to maturity of 5 years; 10 months (4% the first year). Bonds are replaced if lost, stolen, or destroyed. When needed they can be cashed at your bank. Interest is not subject to state or local income taxes, and federal tax may be deferred until redemption.

Kodokan Judo Club Emphasizes Harmonious Development

Persons interested in the harmonious development and eventual perfection of human character will be interested in the Kodokan Judo club which meets on Monday and Wednesday at the Gilruth Recreation Center.

Tom Murtagh (X-4491), one of the three instructors at the club, explained that Judo was founded by Dr. Jigoro Kano in 1882. The two principles of Judo are maximum efficiency and mutual benefit and welfare.

Prior to the introduction of Judo, unarmed combat skills, sometimes called the martial arts, were practiced in Japan for about 1000 years.

The club, which has been operating in Clear Lake City for about two months, opened on site last week. Club dues are payable on the first meeting of each month

and are \$10 per month.

Rates are available which allow family members to participate at a reduction.

Club hours are 5 to 6:30. Other instructors include Dale Moore (X-5495) and Arland Actkinson (X-4366).

Great Pumpkin Regatta Coming Soon

The annual Great Pumpkin Regatta staged by the Clear Lake Sailing Club will take place October 13 and 14 at the Harris County Park in Clear Lake.

On Saturday registration and Check-in time is from 8:30 to 11:30 a.m. The warning gun for the first race goes off at 12:15 p.m. and the warning gun for the second race will be fired at 3 p.m. There will be a social hour following the race with free refreshments.

On Sunday, the warning gun for the third race will be at 10 a.m. Trophies will be awarded after

the races are complete.

Registration fee is \$4.00 and should be mailed to Pat Butler, CLSC, P.O. Box 58212, Houston TX 77058.

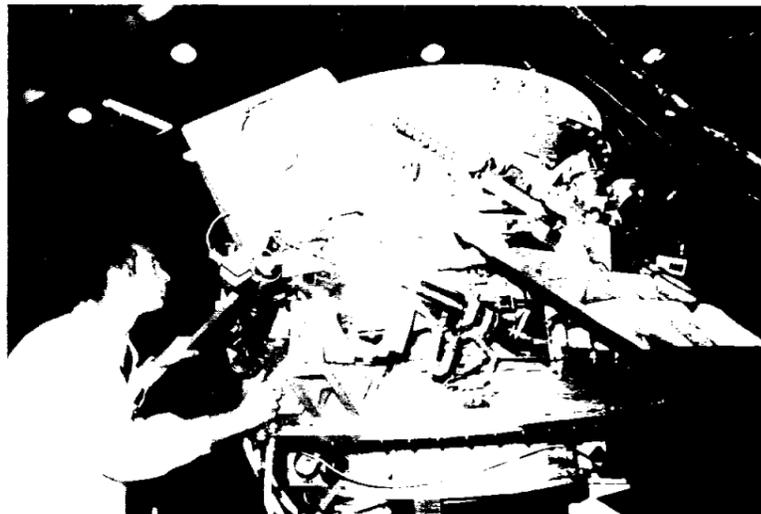
Information about boat classes and hours is also available from Pat at 333-5764. Expected classes include Dolphin Sr., and 17, Sunfish, Snipe, 470, Windmill, Lido, Wildflower, Hobie 14, 12 and 16, Starfish, Scorpion, GC 14, FJ, FD, Thistle, Laser, DS, Coronado 15, Sweet 16, FS, Banshee, Finn and handicap class to include types with fewer than three boats entered

Attention!

John Benson of Philco-Ford will discuss the problems and proposed solutions of remote sensing processing aboard Skylab at the Pizza Inn, 4408 NASA Road I, on October 18.

Benson is responsible for developing the Earth Resources Production Data System for NASA.

Social hour will begin at 6:30. Pizza and beer will be served at 7 p.m. (\$3.50 per person), and the program will begin at 8 p.m. For reservations, contact Glenda Gordy, 333-4150, X-221 by noon, October 17.



DOCKING MECHANISM—Evgeniy Bobrov of the USSR inspects the full scale test model of the Apollo Soyuz Test Project docking mechanism. Bobrov is in the Structures and Mechanics Division High Bay Area.